



EUROPEAN SEARCH REPORT

Application Number
EP 06 01 2528

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	S.ADACHI, S.KATO, T.K.TAN, AND M.ETOH: "CAVLC Cleanup to Accommodate ABT including Field Scans" JOINT VIDEO TEAM (JVT) OF ISO/IEC MPEG & ITU-T VCEG (ISO/IEC JTC1/SC29/WG11 AND ITU-T SG16 Q.6), [Online] 4 October 2002 (2002-10-04), pages 1-4, XP002339408 Geneva, Switzerland, 9-17 Oct. 2002 Retrieved from the Internet: URL: http://ftp3.itu.ch/av-arch/jvt-site/2002_10_Geneva/JVT-E120d0.zip [retrieved on 2005-08-04] * the whole document *	1-6	INV. H04N7/30 H04N7/26 H04N7/50
X	K. LILLEVOLD ET AL.: "CAVLC for ABT" JOINT VIDEO TEAM (JVT) OF ISO/IEC MPEG & ITU-T VCEG (ISO/IEC JTC1/SC29/WG11 AND ITU-T SG16 Q6), no. JVT-E085, 4 October 2002 (2002-10-04), XP030005501 Geneva, Switzerland, 9-17 Oct. 2002 * the whole document *	1-6	
E	WO 2004/032032 A1 (NOKIA CORP [FI]; NOKIA INC [US]) 15 April 2004 (2004-04-15) * page 8, line 5 - line 22 * * page 11, line 18 - page 12, line 16; figures 7, 8a-8d * ----- -/-	1-6	

TECHNICAL FIELDS
SEARCHED (IPC)

H04N

The present search report has been drawn up for all claims

Place of search

The Hague

Date of completion of the search

10 August 2009

Examiner

Colesanti, Carlo

CATEGORY OF CITED DOCUMENTS

X: particularly relevant if taken alone
Y: particularly relevant if combined with another document of the same category
A: technological background
O: non-written disclosure
P: intermediate document

T: theory or principle underlying the invention
E: earlier patent document, but published on, or after the filing date
D: document cited in the application
L: document cited for other reasons
&: member of the same patent family, corresponding document



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A	M. WIEN & A. DAHLHOFF: "16 bit Adaptive Block size Transforms" JOINT VIDEO TEAM (JVT) OF ISO/IEC MPEG & ITU-T VCEG (ISO/IEC JTC1/SC29/WG11 AND ITU-T SG16 Q.6), [Online] 6 May 2002 (2002-05-06), - 10 May 2002 (2002-05-10) pages 1-12, XP002339407 Fairfax, Virginia, USA Retrieved from the Internet: URL: http://ftp3.itu.ch/av-arch/jvt-site/2002_05_Fairfax/JVT-C107.doc [retrieved on 2005-08-04] * Section "Entropy Coding", pages 8-9 * * Introduction *	1-6	
A	M. WIEN & J.-R. OHM: "Simplified Adaptive Block Transforms" ITU - TELECOMMUNICATIONS STANDARDIZATION SECTOR - STUDY GROUP 16 QUESTION 6 - VIDEO CODING EXPERTS GROUP (VCEG), [Online] 4 December 2001 (2001-12-04), - 6 December 2001 (2001-12-06) pages 1-5, XP002339410 Pattaya, Thailand Retrieved from the Internet: URL: http://ftp3.itu.ch/av-arch/jvt-site/2001_12_Pattaya/VCEG-030.doc [retrieved on 2005-08-04] * the whole document *	1-6	
<div>TECHNICAL FIELDS SEARCHED (IPC)</div>			

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EP 06 01 2528

DOCUMENTS CONSIDERED TO BE RELEVANT

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L	<p>G. SULLIVAN, T. WIEGAND, A. LUTHRA: "Preliminary Invitation to the Fifth JVT Meeting" THE JOINT VIDEO TEAM (JVT) OF THE ITU-T Q.6/16 VIDEO CODING EXPERTS GROUP (VCEG) AND THE ISO/IEC JTC1/SC29/WG11 MOVING PICTURE EXPERTS GROUP (MPEG), FILE: INVITATION_R1.DOC, [Online] 9 September 2002 (2002-09-09), pages 1-4, XP002540392 Geneva, Switzerland 9-17 October, 2002 Retrieved from the Internet: URL: http://wftp3.itu.int/av-arch/jvt-site/2002_10_Geneva/ [retrieved on 2009-08-05] * page 3, line 18 - line 26 *</p>		
L	<p>UNKNOWN: "JVT-E000r0.txt" THE JOINT VIDEO TEAM (JVT) OF THE ITU-T Q.6/16 VIDEO CODING EXPERTS GROUP (VCEG) AND THE ISO/IEC JTC1/SC29/WG11 MOVING PICTURE EXPERTS GROUP (MPEG), DOCUMENT: JVT-E000R0.TXT, [Online] 5 October 2002 (2002-10-05), pages 1-4, XP002540393 Geneva, Switzerland 9-17 October, 2002 Retrieved from the Internet: URL: http://wftp3.itu.int/av-arch/jvt-site/2002_10_Geneva/ [retrieved on 2009-08-05] * page 3 *</p>		TECHNICAL FIELDS SEARCHED (IPC)
A	<p>EP 0 562 420 A2 (GEN INSTRUMENT CORP [US] GEN INSTRUMENT CORP [NL]) 29 September 1993 (1993-09-29) * abstract * * page 5, column 8, line 56 - page 7, column 12, line 25; figures 4-6 *</p>	1-6	

The present search report has been drawn up for all claims

Place of search

The Hague

Date of completion of the search

10 August 2009

Examiner

Colesanti, Carlo

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EP 06 01 2528

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
L	<p>Unknown: "Terms of Reference for Joint Video Team (JVT) Activities"</p> <p>February 2002 (2002-02), pages 1-15, XP002540404</p> <p>Retrieved from the Internet: URL: http://www.itu.int/dms_pub/itu-t/oth/34/01/T34010000010001PDFE.pdf [retrieved on 2009-02-20]</p> <p>* Section 8 "Documents and Contributions", page 3 *</p>		
			TECHNICAL FIELDS SEARCHED (IPC)
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 10 August 2009	Examiner Colesanti, Carlo

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For any questions about
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21.08.09

Reference P39035	Application No./Patent No. 06012528.3 - 1247 / 1696675
Applicant/Proprietor NTT DoCoMo, Inc.	

Communication

The extended European search report is enclosed.

The extended European search report includes, pursuant to Rule 62 EPC, the European search report (R. 61 EPC) or the partial European search report/ declaration of no search (R. 63 EPC) and the European search opinion.

Copies of documents cited in the European search report are attached.

☒ 1 additional set(s) of copies of such documents is (are) enclosed as well.

The following have been approved:

☒ Abstract ☐ Title

☐ The Abstract was modified and the definitive text is attached to this communication.

The following figure(s) will be published together with the abstract: 7

Refund of the search fee

If applicable under Article 9 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.



ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 06 01 2528

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

10-08-2009

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 2004032032	A1	15-04-2004	AU 2003253133 A1	23-04-2004
			CA 2498384 A1	15-04-2004
			CN 1689026 A	26-10-2005
			CN 101132534 A	27-02-2008
			EG 23916 A	30-12-2007
			EP 1546995 A1	29-06-2005
			JP 2006501740 T	12-01-2006
			KR 20050052523 A	02-06-2005
			RU 2330325 C2	27-07-2008
			US 2004066974 A1	08-04-2004
EP 0562420	A2	29-09-1993	DE 69320226 D1	17-09-1998
			DE 69320226 T2	15-04-1999
			JP 6078288 A	18-03-1994
			US 5295203 A	15-03-1994

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Anmelde-Nr:

Application No: 06 012 528.3

Demande n°:

The examination is being carried out on the following application documents

Description, Pages

1-29 as originally filed

Claims, Numbers

1-6 as originally filed

Drawings, Sheets

1/7-7/7 as originally filed

Reference is made to the following documents; the numbering will be adhered to in the rest of the procedure:

D1: S.ADACHI, S.KATO, T.K.TAN, AND M.ETOH: "CAVLC Cleanup to Accommodate ABT including Field Scans" JOINT VIDEO TEAM (JVT) OF ISO/IEC MPEG & ITU-T VCEG (ISO/IEC JTC1/SC29/WG11 AND ITU-T SG16 Q.6), [Online] before or on 4 October 2002, pages 1-4, XP002339408 Geneva, Switzerland, 9-17 Oct. 2002 Retrieved from the Internet: URL:http://ftp3.itu.ch/av-arch/jvt-site/2002_10_Geneva/JVT-E120d0.zip [retrieved on 2005-08-04]

D2: K. LILLEVOLD ET AL.: "CAVLC for ABT" JOINT VIDEO TEAM (JVT) OF ISO/IEC MPEG & ITU-T VCEG (ISO/IEC JTC1/SC29/WG11 AND ITU-T SG16 Q6), no. JVT-E085, before or on 4 October 2002, XP030005501 Geneva, Switzerland, 9-17 Oct. 2002

D3: WO 2004/032032 A1 (NOKIA CORP [FI]; NOKIA INC [US]) 15 April 2004

D4: G. SULLIVAN, T. WIEGAND, A. LUTHRA: "Preliminary Invitation to the Fifth JVT Meeting" THE JOINT VIDEO TEAM (JVT) OF THE ITU-T Q.6/16 VIDEO CODING EXPERTS GROUP (VCEG) AND THE ISO/IEC JTC1/SC29/WG11 MOVING PICTURE EXPERTS GROUP (MPEG), FILE: INVITATION_R1.DOC, [Online] on or after 9 September 2002, pages 1-4, XP002540392 Geneva, Switzerland 9-17 October, 2002 Retrieved from the Internet: URL:http://wftp3.itu.int/av-arch/jvt-site/2002_10_Geneva/ [retrieved on 2009-08-05]

D5: UNKNOWN: "JVT-E000r0.txt" HE JOINT VIDEO TEAM (JVT) OF THE ITU-T Q.6/16 VIDEO CODING EXPERTS GROUP (VCEG) AND THE ISO/IEC JTC1/SC29/WG11 MOVING PICTURE EXPERTS GROUP (MPEG), DOCUMENT: JVT-E000R0.TXT, [Online] around 5 October 2002, pages 1-4,

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XP002540393 Geneva, Switzerland 9-17 October, 2002 Retrieved from the Internet: URL: http://wftp3.itu.int/av-arch/jvt-site/2002_10_Geneva/ [retrieved on 2009-08-05]

D6: UNKNOWN: "Terms of Reference for Joint Video Team (JVT) Activities" February 2002 (2002-02), pages 1-15, XP002540404 Retrieved from the Internet: URL: http://www.itu.int/dms_pub/itu-t/oth/34/01/T34010000010001PDFE.pdf [retrieved on 2009-02-20]

1. There appears to be sound evidence that document D1 (JVT-E120) is part of the prior art in the sense of Article 54(2) EPC.

As a matter of fact:

- i.) Document D4 (Invitation letter to the JVT meeting in Geneva, 9-17 October 2002) clearly specifies that the documents to be discussed at the meeting "must be uploaded to the ftp site by midnight on Friday October 4 [2002] in Geneva local time" (D4, page 3, lines 23-26). Furthermore, document D5 marks document D1 (i.e. document JVT-E120) with the star (*), thereby clarifying that it was present in due time on the ftp site (D2, page 1, first line in combination with page 3, line 10 from the bottom). It is worthwhile remarking that being present on the ftp site implies being available to the public since all input and output JVT documents are meant to be public (unless the contributor indicates otherwise), see D6, section 8 "Documents and Contributions", page 3.
- ii.) Document D2 was modified (and saved) the last time on 4 October 2002. It explicitly states that "the method described here is identical to the method proposed by DoCoMo in JVT-E120" (i.e. in D1). This implies once more that D1 must have been available to the public on or before 4 October 2002.

2. The subject-matter of independent claims 1-6 is not new in the sense of Article 54 (1) and (2) EPC, and therefore the requirements of Article 52(1) EPC are not met.

2.1 With reference to independent claim 1, document D1 discloses:

An image encoding method of dividing image signals into blocks, performing an orthogonal transform of each block, reading resultant orthogonal transform coefficients to obtain a coefficient string, and performing entropy coding thereof, the image encoding method comprising (the technical teaching of D1 is explicitly meant to be used in the framework of JVT - H.264 video coding. D1, therefore, necessarily includes all the core features of H.264 like the ones listed in this first paragraph of claim 1):

a block selecting step of selecting a size of a block for the orthogonal transform, out of a plurality of blocks of different sizes (D1, section 1, lines 3-4. Note that ABT is the abbreviation of "adaptive block (size) transform".);

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Application No: 06 012 528.3
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an orthogonal transforming step of performing an orthogonal transform on a block of the size selected in the block selecting step (D1, section 1, lines 3-4), and reading the orthogonal transform coefficients to obtain a coefficient string (D1, section 2.1, lines 1-4);

a coefficient string dividing step of, when a block of a size larger than a minimum size is selected in the block selecting step, dividing a coefficient string obtained in the orthogonal transforming step into a plurality of coefficient strings of a length equal to that of a coefficient string in a block of the minimum size (D1, section 2.1, lines 5-15); and

an encoding step of performing entropy coding for the respective coefficient strings obtained in the coefficient string dividing step (D1, section 1 in combination with section 2.1, last two lines),

wherein

the block selecting step selects either an 8x8 pixel size or a 4x4 pixel size (D1, section 1);

the orthogonal transforming step performs an orthogonal transform on the block of a size of either the 8x8 pixel size or the 4x4 pixel size selected in the block selecting step, and reads the orthogonal transform coefficients sequentially from a low frequency component to obtain the coefficient string consisting of either 64 or 16 coefficients (D1, section 1 in combination with section 2.1, line 15);

the coefficient string dividing step, when the 8x8 pixel size block is selected in the block selecting step, divides the coefficient string consisting of 64 coefficients into four coefficient strings respectively consisting of 16 coefficients, by reading the coefficients of the coefficient string consisting of 64 coefficients, obtained in the orthogonal transforming step, sequentially from a low frequency component and assigning the read coefficients, one by one in order, to the four coefficient strings (D1, section 2.1, lines 5-10); and

the encoding step performs entropy coding, respectively, for the coefficient string obtained in the orthogonal transforming step consisting of 16 coefficients, and for the coefficient string obtained in the coefficient string dividing step consisting of 16 coefficients (D1, section 1 in combination with section 2.1, last two lines).

The subject-matter of independent claim 1 is, therefore, not new (Article 54(1) and (2) EPC) OR does not involve an inventive step (Article 56 EPC).

2.2 The same objection (lack of novelty, Article 54(1) and (2) EPC) applies also to the subject-matter of independent claims 3 and 5 as well as 2, 4 and 6.

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i.) Claims 3 and 5 are addressed respectively to an "image encoding apparatus" and an "image encoding program", but, in terms of technical features, their subject-matter matches exactly the subject-matter of independent claim 1.

ii.) Claims 2, 4 and 6 are addressed to the decoding method (apparatus, program) corresponding to the encoding method (apparatus, program) of independent claim 1 (2, 3).

Their subject-matter is not new (Article 54(1) and (2) EPC) in the light of the above-mentioned passages of D1 taken in combination with D1, section 5.2, page 4 from the word "With" on line 6 to the end of the section.

Therefore, the subject-matter of independent claims 2-6 also lacks novelty (Article 54(1) and (2) EPC).

3. For the sake of completeness it is worthwhile mentioning the claims 1-6 lack novelty (Article 54(1) and (2) EPC) also with respect to what is disclosed in documents D2 and D3.

3.1 D2 is part of the prior art (Article 54(2) EPC) for the very same reasons set out above under point 1.i.

Taking into account that D2 is meant to build on the JVT - H.264 standard (thereby including all its main features), D2 discloses all the features of claims 1-6 in the sections "Introduction" and "Description".

Note that D2 even explicitly states that the method described therein "is identical to the method proposed by DoCoMo in JVT-E120", i.e. in D1.

3.2 D3 is part of the prior art in the sense of Article 54(3) EPC (taking into consideration Article 89 EPC).

As a matter of fact, D3 was published (15 April 2004) after the priority date claimed by the applicant (8 October 2002) but the priority date claimed by D3 (3 October 2002) is prior to the one claimed by the applicant (8 October 2002).

D3 discloses all the features of claims 1-6, see D3, page 8, lines 5-22 in combination with page 11, line 18 to page 12, line 16 and with figures 7, 8a-8d, 9 and 10.

4. The claims of the current application (EP06012528) clearly relate to the very same subject-matter as the claims of its parent application (EP03022877). As a matter of fact, the core feature of the independent claims of both applications is the division of a coefficient string into sub-strings in order to guarantee an efficient entropy coding also when using an orthogonal transform that works on different block sizes (see also statement of the invention and technical problem mentioned in the description, page 1, lines 12-14, pages 9-10, paragraphs 16 and 17). In other words both applications claim the very same invention, even though characterising it with a different level of detail by using different sets of technical

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features.

As a consequence thereof the application fails to meet the requirement stated in the Guidelines C-VI, 9.1.6.

Furthermore, there seems to be a serious issue of double patenting, see the Guidelines C-IV, 7.4.

5. At least some of the objections raised above are such that there appears to be no possibility of overcoming them by amendment. Refusal of the application under Article 97(2) EPC is therefore to be expected.

The applicant - if he wishes to do so - is invited to put forward his considerations on the objections set out under the previous points.

Furthermore, if the applicant regards some particular matter as patentable, a new set of claims should be filed taking account of Rule 43(1) EPC. In this case:

5.1 The subject-matter should be defined in terms of a single independent claim in each category followed by dependent claims introducing only additional features that are merely optional (Rule 43(2-4) EPC).

5.2 In order to facilitate the examination of the conformity of the amended application with the requirements of Article 123 (2) EPC, the applicant is requested to clearly identify the amendments carried out, irrespective of whether they concern amendments by addition, replacement or deletion, and to indicate the passages of the application as filed on which these amendments are based.

5.3 The applicant is requested to take into account also following minor objections:

i.) The independent claims are not in the two-part form in accordance with Rule 43(1) EPC, with those features known in combination from the prior art being placed in the preamble (Rule 43(1)(a) EPC) and with the remaining features being included in the characterising part (Rule 43(1)(b) EPC).

ii.) The features in the claims should be provided with reference signs in parentheses linking to the corresponding drawing (Rule 43(7) EPC).

5.4 It is suggested to delay the revision of the description until such time as allowable claims are agreed upon.